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**REMARKS****INTRODUCTION**

In accordance with the foregoing, claims 1, 2, 4, 5, 8, 11, 13, 14, 16, 17, 19, 21, 22, 24, 25, 28, and 31 have been amended and new claims 33-35 have been added. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-35 are pending and under consideration. Reconsideration is respectfully requested.

**ALLOWABLE SUBJECT MATTER**

In the outstanding Office Action at page 5, numbered item 3, the Examiner indicated that claims 17-20 were objected to, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Independent claims 17 and 19 have been amended to include all of the limitations of the base claim and any intervening claims. Claims 18 and 20 depend directly from claims 17 and 19, respectively. Thus, Applicants respectfully submit that claims 17-20 are now in condition for allowance.

In the outstanding Office Action at page 6, numbered item 4, the Examiner indicated that claims 5-12 and 25-32 are allowable. Claims 5, 8, 11, 25, 28, and 31 have been amended only to provide proper antecedent basis.

**REJECTION UNDER 35 U.S.C. §103**

In the Office Action at pages 2-5, numbered item 2, claims 1-4, 13-16, and 21-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,947,746 to Jeschke, et al. in view of U.S. Patent No. 5,031,534 to Brunner. The reasons for the rejection of these claims are set forth in the Office Action and therefore not repeated. The rejections are traversed and reconsideration is requested.

Amended independent claim 1 is directed to a printing method of printing a control strip including patches on a printed matter, measuring color densities of patches, and performing printing control based on the color densities. Independent claim 1 has been amended to recite that "the patches include four typical patches of black, cyan, magenta, and yellow at dot area

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rates of 80 to 85% in a width of each ink key." Independent claims 4, 13, 16, 21, and 24 have been similarly amended to include dot area rates of 80 to 85%. Claims 2, 14, and 22 have each been amended to recite that "the dot area rates of the four typical patches are 80%." Support for these amendments to the claims 1, 2, 4, 13, 14, 16, 21, 22, and 24 can be found in the originally filed Specification, at least at page 31, line 26 to page 34, line 12.

Jeschke teaches using patches at a dot area rate of 75%. The present invention, in contrast, uses dot area rates of 80 to 85%. Using dot area rates of 80 to 85% provides significant advantages over using a dot area rate of 75%, as taught by Jeschke.

The figure attached as Exhibit A illustrates the results of a simulation performed by Applicants using a standard tone curve. In this simulation, an "OK" or acceptable sheet is selected from matter printed under standard printing conditions. The printing state is constantly variable, and the color densities of the light part and middle part vary because of the influence of a dot gain thereon. It is assumed that this dot gain is 5%. The simulation was run using patches at 75%, 80%, and 85% dot area rates, and the results produced using each dot area rate were compared with the "OK" sheet to determine which dot area rate produced the color density closest to the color density of the "OK" sheet.

Attached as Exhibit B is a table showing a comparison between the density difference added values of the "OK" sheet and 5% dot gain curve with respect to the color densities of the light part and the middle part. More specifically, Exhibit B shows the values obtained in the simulation described above under controls using patches of 75%, 80%, and 85% dot area rates. The values were obtained by summing absolute values of density differences between the "OK" sheet and the 5% dot gain curve with respect to dot area rates of 0% to 100%, 0% to 95%, 0% to 90%, 0% to 85%, and 0% to 80%.

Thus, the smaller the value shown for a particular control in Exhibit B, the closer the 5% dot gain curve is to the "OK" sheet. For example, in comparing the controls using patches of 80% and 85% dot area rates, respectively, at dot area rates of 0% to 90%, Exhibit B indicates that the control using patches of an 80% dot area rate is closer to the "OK" sheet than the control using patches of an 85% dot area rate. In printing, it is preferable that the density of the light part and the middle be part be similar. Therefore, Exhibit B indicates that the control using an 80% dot area rate is more effective than the control using an 85% dot area rate.

The simulation described above was also performed on the shadow part to compare the density difference added values of the "OK" sheet and 5% dot gain curve. The results of this

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simulation are presented in **Exhibit C**. **Exhibit C** shows the values obtained in the simulation described above under controls using patches of 75%, 80%, and 85% dot area rates. The values were obtained by summing absolute values of density differences between the "OK" sheet and the 5% dot gain curve with respect to dot area rates of 80% to 100%, 90% to 100%, and 95% to 100%. The densities at all dot area rates of 80% to 100%, 90% to 100%, and 95% to 100% are closer to the "OK" sheet for the control using an 80% dot area rate than for the control using a 75% dot area rate.

As shown in **Exhibit B**, the color densities of the light part and middle part are close to that of the "OK" sheet for the control using a 75% dot area rate, but not close to the "OK" sheet for the control using an 85% dot area rate. **Exhibit C** shows that, for the control using a 75% dot area rate, the shadow part is not close to the "OK" sheet and the shadow part is close to the "OK" sheet for an 85% dot area rate. The control using an 80% dot area rate, however, exhibits densities close to that of the "OK" sheet with respect to the light part, the middle part, and the shadow part. Thus, the 80% dot area rate is more advantageous than the 75% dot area rate.

Additionally, using a dot area rate of 80% provides for more stability than a dot area rate of 75%. For example, in a color control system, when a control using an 80% dot area rate is used, the dead band is set to  $\pm 0.02$  to achieve a certain print quality. Additionally, in order to standardize the printed matter, the tolerance is set to  $\pm 0.05$ . These values are shown in **Exhibit D**. When a control using a 75% dot area rate is used, the dead band must be set to  $\pm 0.018$  and the tolerance set to  $\pm 0.04$  to achieve the same print quality with a 75% dot area rate. These values are also shown in **Exhibit D**. However, it is difficult to set the dead band smaller than  $\pm 0.02$  and, when scanned with a densitometer, printed matter produced using a 75% dot area rate may not fall within an acceptable tolerance range.

For at least these reasons, Applicants respectfully submit that Jeschke and Brunner, taken alone or in combination, fail to teach or suggest that "the patches include four typical patches of black, cyan, magenta, and yellow at dot area rates of 80 to 85% in a width of each ink key," as recited in amended independent claims 1, 4, 13, 16, 21, and 24, or that "the dot area rates of the four typical patches are 80%," as recited in amended dependent claims 2, 14, and 22. A dot area rate of 80% is advantageous. For at least these reasons, Applicants respectfully submit that claims 1-4, 13-16, and 21-24 patentably distinguish over the prior art and are in condition for allowance.

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**NEW CLAIMS 33-35**

New claims 33-35 depend directly from independent claims 4, 16, and 24, respectively. Each of these new claims recite that "the dot area rates of the typical patches of cyan, magenta and yellow are 80%." Applicants respectfully submit that new claims 33-35 patentably distinguish over the prior art for the same reasons as claims 4, 16, and 24, which are discussed above, and are in condition for allowance.

**CONCLUSION**

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS &amp; HALSEY LLP

Date:

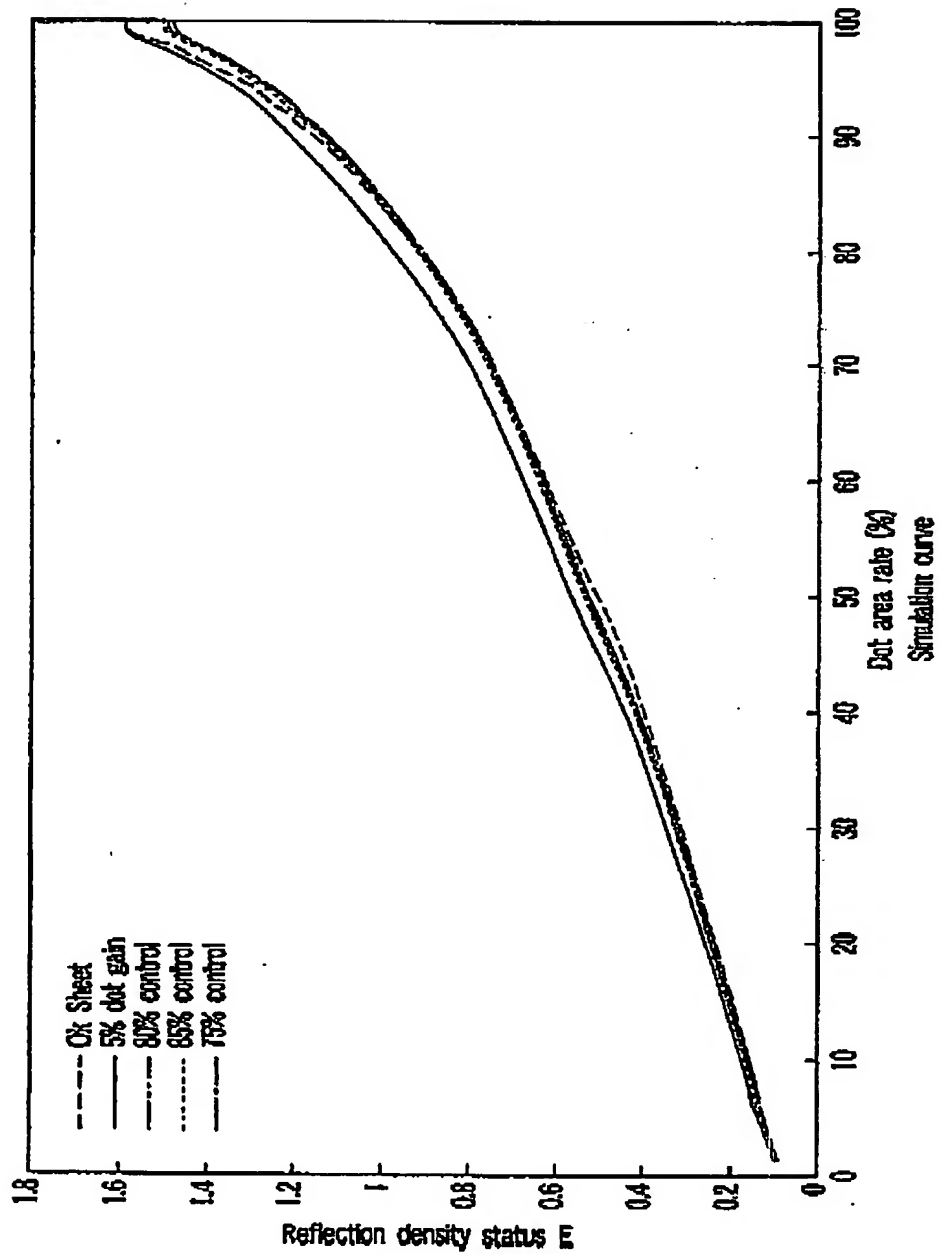
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## EXHIBIT A



**EXHIBIT B**

Comparison in Density Difference Added Value between OK Sheet and 5% Dot Gain Curve With  
Respect to Light part and Middle Part

	75% Control	80% Control	85% Control
0 to 100%	0.860	0.793	0.727
0 to 95%	0.443	0.428	0.427
0 to 90%	0.209	0.236	0.292
0 to 85%	0.181	0.216	0.283
0 to 80%	0.164	0.207	0.283

**EXHIBIT C**

**Comparison Between Density Difference Added Values of "OK" Sheet and  
5% Dot Gain Curve with Respect to Shadow Part**

	75% Control	80% Control	85% Control
80 to 100%	0.702	0.586	0.452
90 to 100%	0.679	0.577	0.444
95 to 100%	0.468	0.409	0.331

**EXHIBIT D****Tolerance Difference and Dead Band**

	<b>Tolerance <math>\pm</math></b>	<b>Dead Band <math>\pm</math></b>
<b>80%</b>	<b>0.05</b>	<b>0.020</b>
<b>75%</b>	<b>0.04</b>	<b>0.018</b>